AGC/WSDOT Structures Team Meeting

Nov. 14, 2003
9:00 AM –12:00 PM NWR Corson Avenue Facility

Attendees:	Company	Phone	E-mail
Ayers Scott	Wilder Const.	425-508-3246	scottaye@wilderconstruction.com
Barney Millard	Conc. Tech.	253-383-3545	mbarney@concretetech.com
Casey Daniel	KLM Const.	253-297-2750	dcasey@klmci.com
Foster Marco	WSDOT-NWR	360-428-1593	fosterm@wsdot.wa.gov
Hilmes Bob	WSDOT-ER	509-324-6232	Hilmesb@wsdot.wa.gov
Leachman Dan	Kiewit Const.	425-255-8333	dLeachman@kiewit-PBD.com
Madden Tom	WSDOT_UCO	206-768-5861	maddent@wsdot.wa.gov
McCoy Charlie	Atkinson Const.	425-255-7551	cmcco@Atkn.com
Quigg John	Quigg Bros.	360-533-1530	johnq@quiggbros.com
Sheikhizadeh M.	WSDOT-HQ	360-705-7828	sheikhm@wsdot.wa.gov
Smith Tobin	Max J. Kuney	509-535-0651	tobin@maxkuney.com
Swenson Robb	General Const.	360-394-1407	Robb.Swenson@kiewit.com

The meeting started at 9:00 AM. Mo introduced and welcomed:

Joshua Braunstein	Structural Radar Imaging
Keith Ward	City of Seattle
Jon Marsh	City of Seattle

Ground Penetrating Radar

Mo indicated that, due to lack of accurate rebar location, a number of rebars in the existing structures are getting damaged during drilling. For the seismic retrofit jobs some large rebars have needed to be severed during placement of the brackets. Joshua Braunstein of the Structural Radar Imaging gave a presentation on the use of GPR for locating rebars in the existing bridges. Some highlights of his presentation:

- High band radio waves with frequencies of 1.5 GHZ are used
- Precisely locates rebars, post-tensioning cables, voids in concrete, and subsurface utilities
- Only one side of surface needs to be scanned
- Set up time and results are immediate
- Determines exact depth of rebars
- Penetrates ¼" to 8", deeper with less accuracy
- Can generate 2D and 3D images
- Requires a minimum of 3" or more spacing between rebars
- Can be used for locating deck delamination
- Equipment cost is $36K
- Cost is $175/hr plus $75/hr for mob from Kent WA.

The team members deliberated potential use of this technology for future contracts. Bob Hilmes mentioned that GPR has not been effective in locating subsurface utilities in the past. Most members suggested trying GPR on a pilot project using FA for payment method.

Action Plan: Try GPR on a pilot project with FA method of payment

Intellirock Maturity System

Jerry Rackly of Intellirock hosted a Web based presentation on the use and advantages of the Intellirock maturity meters. Kiewit Construction has proposed this technology for determination of concrete compressive strength for falsework release at the Hood Canal Bridge. The following are key points of the presentation:

- Provides real time information
- Early batch/mix verification
- Enhances quality control
- Saves money and time
- Test cylinders used to establish the calibration curve (time vs. temperature) ASTM C 1074-98
- Compressive strength is a function of conc. temp and not time
- Cost for a starter kit $1,500

Dan mentioned that major savings might be realized if no cylinders were needed for strength verification. This technology has been used in the private industry for a number of years. Scott asked if the 14 days wait for the wall backfilling could be reduced based on the maturity meter obtained data. This issue is placed on the discussion topics for future deliberation.

Action Plan: HQ Construction and the Mats Lab will discuss this issue on Jan 20. Mo will update the team of this decision.

Update on the Stand. Specs

6-02.3(5)C—cement and aggregate tolerances: Mo reported that the WACA group, in response to a request from this team, have proposed to change the maximum tolerance for cement from 1% to 5% and for aggregates from 2% to 10% for loads less than 4 cubic yards. Members asked for the increase in tolerances to be implemented regardless of volume restrictions.

Action Plan: Mo will discuss this proposal at the next WACA meeting and will report back

6-02.3(11)—Moist Cure: Mo passed out modifications of this spec to further clarify the intent of moist curing. After the team deliberation, the team suggested to change the word "saturated" to "wet" (note the attachment.)

Action Plan: Mo will update this spec and will include in the 2004 Amendments.

6-02.3(5)A—Acceptance of concrete: Mo mentioned that due to incorrect interpretation of this spec by the producers, this spec needed to be updated.

Action Plan: This Spec has been added to the 2004 Amendment. No further action is Needed.

9-09.2—Hem-Fir Lagging: Due to frequent requests from the Contractors to allow substitution of Hem-Fir #1 for Doug-Fir #2, this addition to the specs has been made.

Action Plan: This addition to the Specs is currently part of the 2004 Amendments. No further action is necessary.

Problems with Use of Plastic Chairs

Mo asked the team if they had encountered movement of the plastic chairs during concrete placement. The Contractor for the McCleary Bridge had a lot of problems with the deck overhang plastic chairs during concrete placement. No one in among the team members has experienced any difficulty with these chairs in the past.

Action Plan: Mo will research this issue further and get back to the group

Future Meeting Dates

Jan. 16, 2004
Feb. 20
March 12
April 9
May 7
June 18

Adjournment
The meeting adjourned at 12:00 PM